RECEIVED
CENTRAL FAX CENTER
SEP 18 2006

REMARKS

The Examiner has cited a number of decisions of the Board of Patent Appeals and Interferences and the courts in regard to the rejection of Applicants' claims for lack of enablement under 35 U.S.C. 112, first paragraph. One of these decisions is In re Fisher 166 USPQ18 of the CCPA. In re Fisher is a regularly cited case in Board and court decisions on enablement. Applicants have previously given reasons for why they believe that In re Fisher supports their position that all of Applicants' claims rejected for lack of enablement are in fact enabled.

Applicants herein are presenting an application of In re Fisher to the facts of the present prosecution that they have not previously presented. Applicants are submitting this in a Response After Final rejection in the hope that this new look at In re Fisher may avoid the necessity of filing an appeal brief.

Applicants respectfully requests the Examiner and Supervisor Examiner to reconsider the rejection of Applicants' claims that have been rejected for lack of enablement in view of these new comments on In re Fisher and related decisions of the USPTO Board of Patent Appeals and Interferences and court decisions.

In In re Fisher 166 USPQ 18 two claims (4 and 5) were under appeal. Claim 4 was directed to "A method ... for producing ACTH [adrenocorticotrophic hormones] preparations having potencies ranging from 111% to 230% of standard and containing no more than 0.08 units of vasopressin and no more than 0.05 units of oxytocin per International Unit of ACTH, which limits are said to be tolerable to humans." 166 USPQ 18, 20. "The claim recites that the product must contain 'at least' 24 amino acids in a specified sequence." 166 USPQ 18, 21. To avoid a reference to Li, having a publication date prior to the filing date, the appellant relied on its parent application of which the application under appeal was a continuation-in-part. The CCPA states:

> Appellant's parent application, therefore, discloses no products, inherently or expressly, containing other than 39 amino acids, yet the claim includes all polypeptides, of the recited potency and purity, having

> at least 24 amino acids in the chain in the recited sequence. The parent specification does not enable one skilled in the art to make or obtain ACTH's with other than 39 amino acids in the chain, and there has been no showing that one of ordinary skill would have known how to make or obtain such other ACTH's without undue experimentation. As for appellant's conclusion that the 25th to 39th acids in the chain are unnecessary, it is one thing to make such a statement when persons skilled in the art are able to make or obtain ACTH having other than 39 amino acids; it is quite another thing when they are not able to do so. In the latter situation, the statement is in no way "enabling" and hence lends no further support for the broad claim. We conclude that appellant's parent application is insufficient to support a claim as broad as claim 4. For this reason we affirm the board's rejection of claim 4 as unpatentable over the Li references.

From this statement, it is clear that the reason for why the CCPA did not find the claims under appeal patentable was that the applicant did not teach how to make ACTH with anything but 39 amino acids and there was no evidence in the record that a person of skill in the art knew how to make ACTH with anything but 39 amino acids. It is also clear that if persons of skill in the art knew how to make ACTH with more or less than 39 amino acids, the claims would not have been found not enabled.

In regard to the rejection of Fisher claims 4 and 5 for lack of enablement the CCPA states:

> We have already discussed, with respect to the parent application, the lack of teaching of how to obtain other-than-39 amino acid ACTHs. That discussion is fully applicable to the instant application, and we think the board was correct in finding insufficient disclosure due to this broad aspect of the claims. 166 USPQ 18, 23.

Thus the claims in Fisher were found not enabled because the Fisher application did not teach how to make "other-than-39 amino acid ACTHs" and there was no evidence in the record that persons of skill in the art knew how to make "other-than 39 amino acid ACTHs."

In regards t the rejection for enablement, the CCPA further states:

> The issue thus presented is whether an inventor who is the first to achieve a potency of greater than 1.0 for certain types of compositions, which potency was long desired because of its beneficial effect on humans, should be allowed to dominate all such compositions having

> potencies greater than 1.0, including future compositions having potencies far in excess of those obtainable from his teachings plus ordinary skill. 166 USPQ 18, 23.

Thus the CCPA rhetorically asks the question whether the first person to discover a composition having a potency greater than 1 where such potency is of significant value should be allowed a claim "including future compositions having potencies far in excess of those obtainable from his teachings plus ordinary skill."

The CCPA answers this rhetorical question stating:

> It is apparent that such an inventor should be allowed to dominate the future patentable inventions of others where those inventions were based in some way on his teachings. 166 USPQ 18,24

From this statement is clear that applicants such as the Applicants of the present invention "should be allowed to dominate the future patentable inventions of others where those inventions were based in some way on his teachings." In the present application it is undisputed that the high Tc materials discovered by others after Applicants' discovery "were based in some way on [Applicants'] teachings."

The CCPA further states in In re Fisher in regards to later inventions of other:

> Such improvements, while unobvious from his teachings, are still within his contribution, since the improvement was made possible by his work. 166 USPQ 12, 24

Thus in the present application "while [the high Tc materials discovered by others after Applicants' discovery may be] unobvious form [Applicants'] teachings, [they] are still within [Applicants'] contribution, since the improvement was made possible by [Applicants'] work." Applicants respectfully submit that the Examiner agrees with this when the Examiner states at page 8 of the Final Action:

> Such is the basis of applicant's invention. The examiner does not deny that the instant application includes "all know principles of ceramic science", or that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K*, such a person of skill in the art, using the techniques described in the application, which included all principles of ceramic fabrication known at

RECEIVED
CENTRAL FAX CENTER
SEP 18 2006

> the time the application was initially filed, can make the known superconductive compositions. (Emphasis in the original.)

The Examiner states here the that "The examiner does not deny ... that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K,* such a person of skill in the art, using the techniques described in the application, ... can make the known superconductive compositions." (Emphasis in the original.) Thus Applicants respectfully submit that it is the Examiner's finding of fact that the "known superconductive compositions" are " based in some way on [applicants'] teachings" and thus under In re Fisher Applicants "should be allowed to dominate the future patentable inventions of others."

At page 8 of the Final Action the Examiner further states:

> The numerous 1.132 declarations, such as those of Mitzi, Shaw, Dinger and Duncombe, and the Rao article, are directed to production of know superconductive materials.

The Affidavits of of Mitzi, Shaw, Dinger and Duncombe (Attachments 16, 17, 18, and 19 of Fifth Supplementary Amendment dated March 1, 2004 and the Affidavit of Shaw dated April 14, 2005, the Affidavit of Dinger dated April 4, 2005 and the Affidavit of Tsuei dated April 4, 2005 (the last three affidavits are referred to herein as the DST Affidavits)) state:

> Once a person of skill in the art knows of a specific type of composition described in the Bednorz-Mueller application which is superconducting at greater than or equal to 26°K, such a person of skill in the art, using the techniques described in the Bednorz-Mueller application, which includes all principles of ceramic fabrication known at the time the application was initially filed, can make the compositions encompassed by the claims of the Bednorz-Mueller application, without undue experimentation or without requiring ingenuity beyond that expected of a person of skill in the art of the fabrication of ceramic materials. This is why the work of Bednorz and Mueller was reproduced so quickly after their discovery and why so much additional work was done in this field within a short period after their discovery. (See paragraph 8 of the DST Affidavits.)

Thus the Examiner agrees with Applicants' affiants.

The Examiner further states at page 9 of the Final Action:

> What is not a "matter of routine experimentation" in this complex, unpredictable art is arriving at superconductive compositions outside the scope of the allowable claims (e.g., subsequently discovered BSCCO or Tl-systems as disclosed in Rao (see response filed 3/8/05, pages 141-143).

Applicants respectfully disagree. Applicants believe that this statement is inconsistent with the Examiner's earlier statement above "that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K*, such a person of skill in the art, using the techniques described in the application, ... can make the known superconductive compositions." (Emphasis in the original.) Applicants respectfully submit that this statement of the Examiner is stating that within the meaning of the US patent law the art of high Tc material is predictable. Additional support for this view is below. Applicants believe what the Examiner is really saying is:

> What is not ..."[obvious]" in this complex, [predictable] art is arriving at superconductive compositions outside the scope of the allowable claims (e.g., subsequently discovered BSCCO or Tl-systems as disclosed in Rao ....

However In re Fisher permits "[s]uch improvements, [which] while unobvious from [Applicants'] teachings, are still within [Applicants'] contribution, since the improvement was made possible by [Applicants'] work." Thus under In re Fisher Applicants are entitled to their generic claims even though later workers may have discovered unobvious species within the scope of Applicants' generic claims for which such later workers may be entitled to patent claims to such later discovered potentially unobvious species. That there may be potentially patentable unobvious species, not specifically identified by Applicants' teaching, does not mean, under In re Fisher, that Applicants have not fully enabled the genus that their claims cover. In re Fisher clearly permits an applicant to be allowed a generic claim covering species not explicitly taught that are not obvious patentable species within the scope of Applicants' claims.

Stated in another way, In re Fisher permits a first discoverer of an invention to be allowed a generic claim if the first discoverer teaches how to "make and use" species that

come within the scope of the generic claim. To be allowed the generic claim In re Fisher does not require the first discoverer to specifically teach or to suggest every species that comes within the scope of the generic claim or to provide a theory which can be used to "theoretically predict" species that come within the scope of the generic claim. If In re Fisher required such specific teaching, suggestion or "theoretical predictability" then it would not be possible, as In re Fisher states, "that such an inventor should be allowed to dominate the future patentable inventions of others where those inventions were based in some way on his teaching," because the future inventions of others would not be patentable since the earlier discoverer to be allowed the generic claim would have taught or suggested those future inventions or would have provided a theory to predict their existence and thus such future inventions would be anticipated or obvious in view of the earlier disclosure with the allowed genius claim. This is clearly not what In re Fisher stands for.

The Examiner further states at page 9 of the Final Action in regards to later discovered materials "[t]he examiner respectfully maintains that the instant disclosure has not provided sufficient guidance to produce such materials." Applicants respectfully submit that this statement is inconsistent with the Examiner's earlier statement above "that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K*, such a person of skill in the art, using the techniques described in the application, ... can make the known superconductive compositions" (emphasis in the original.) in which the Examiner states that later discovered species are fabricated according to Applicants' teaching which means that Applicants' teaching has guidance on "how to make" the hight Tc materials that come within the scope of Applicants' claims. Moreover, as described in detail in the prosecution of this application, the later discovered high Tc materials are consistent with the specific teaching of Applicants' original disclosure (see the DST Affidavits). Thus Applicants' teaching has sufficient guidance to practice Applicants' claimed invention. Guidance is not predicting in advance what species will work, but is guidance on how to "make and use" the claimed invention as explicitly stated in 35 USC 112, paragraph one. As stated

above, it is Applicants' understanding that the Examiner agrees that Applicants have taught how "to make and use" the claimed invention.

That a patent applicant can be allowed a claim that dominates the latter discovered patentable invention of others means that the claim allowed includes within its scope the patentable invention of the later discover. For the later discovered invention to be patentable over the teaching of the earlier disclosure means that the earlier disclosure cannot teach or suggest the later discovered invention. Thus, In re Fisher clearly acknowledges that the earlier applicant is entitled to a generic claim that includes within its scope that which it does not specifically teach nor suggest, but which it teaches how "to make and use" which is the only requirement of 35 USC 112, first paragraph.

The Examiner further states at page 9 of the Final Action

> At page 125 of the response filed 1/31/05, applicant argues In re Fisher (166 USPQ 18] emphasizing "It is apparent that such an inventor should be allowed to dominate the future patentable inventions of others where those inventions were based in some way on his teachings". The examiner respectfully submits the remaining statements of Fisher are equally important:
>
> > It is equally apparent, however, that he must not be permitted to achieve this dominance by claims which are insufficiently supported and hence, not in compliance with the first paragraph of 35 USC 112. That paragraph requires the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the specification to persons of ordinary skill in the art... In cases involving unpredictable factors such as most chemical reactions... the scope of enablement obviously varies inversely with the degree of unpredictability of the factors involved.

As described in detail above it is clear that the reason for why the CCPA in In re Fisher did not find the claims under appeal patentable was that the applicant did not teach how to make ACTH with anything but 39 amino acids and there was no evidence in the record that a person of skill in the art knew haw to make ACTH with anything but 39 amino acids. The situation is different here. As stated above, it is Applicants' understanding that the Examiner's own finding of fact is that the "known superconductive compositions" are "based in some way on [applicants'] teachings." Moreover the complex chemistry does not have to be understood to fabricate samples as stated in the book "Copper Oxide

Superconductors" by Charles P. Poole, et al. (Poole 1988) (See ¶ 48 of DST AFFIDAVITS) which states at page 59:

> [c]opper oxide superconductors with a purity sufficient to exhibit zero resistivity or to demonstrate levitation (Early) are not difficult to synthesize. We believe that this is at least partially responsible for the explosive worldwide growth in these materials.

Poole 1988 further states at page 61:

> [i]n this section three methods of preparation will be described, namely, the solid state, the coprecipitation, and the sol-gel techniques (Hatfl). The widely used solid-state technique permits off-the-shelf chemicals to be directly calcined into superconductors, and it requires little familiarity with the subtle physicochemical process involved in the transformation of a mixture of compounds into a superconductor.

Since skilled artisans can fabricate samples without knowing the "subtle physiochemical process involved" and without a detailed theory, this art is predictable. The statement from In re Fisher as quoted above that "[i] in cases involving unpredictable factors such as most chemical reactions" explicitly does not state that all chemical reactions are unpredictable. In fact in the present invention, as stated by Poole 1988 quoted above, to make superconductors "requires little familiarity with the subtle physiochemical processes involved in the transformation of a mixture of compounds into a superconductor." This is one of the reasons for why Poole 1988 also states, as quoted above, that the superconductors "are not difficult to synthesis" and for why Poole 1988 also states as quoted above "that this is at least partially responsible for the explosive worldwide growth in these materials" shortly after Applicants' discovery. Thus the facts of the instant application are different from the fact of In re Fisher where the claims were found not enabled because, as stated above, the CCPA found that the Applicant there did not teach how to make "other-than-39 amino acid ACTHs" and there was no evidence in the record that persons of skill in the art knew how to make "other-than 39 amino acid ACTHs." Consequently, the invention of In re Fisher may have been one of those "most chemical reactions" that involve unpredictable factors, but in contradistinction, the present invention is one of those chemically related applications that fall outside what the CCPA means by "most chemical reactions" since the present invention does not involve

"unpredictable factors" since as stated by Poole 1988 the chemistry does not have to be understood to make the superconductors since the methods to make these superconductors are so well know. All that is needed is routine experimentation to fabricate samples. (See DST AFFIDAVITS) There is no evidence to the contrary. Applicants respectfully submit that the Examiner has cited no evidence to the contrary and has presented no argument to the contrary. As stated above Applicants respectfully submit that the Examiner is viewing later discovered species that may be nonobvious in view of Applicants' teaching as a reason to find Applicants generic claims as being not enabled. As described above, Applicants respectfully submit that such a view is inconsistent with In re Fisher which clearly permits a finding that a generic claim is enabled even though there may be later discovered nonobvious species within its scope. When an Examiner allows a species claim to a later applicant as a nonobvious species, with unexpectedly better results,in view of a prior art patent that claims a genus which includes the latter discovered species, the Examiner is not, by allowing the claim to the latter discovered species, rendering the earlier claimed genus invalid for the lack of the earlier disclosure enabling the latter discovered patentable species. It is routine practice for an Examiner to allow a later discovered species with unexpected results in view of an earlier prior art patent that claims a genus that include such species where the newly discovered species is made in the same way as taught in the earlier disclosure. See MPEP sections 16.02, 2144.08.

On the same day that the CCPA decided In re Fisher, the CCPA decided In re Irani 166 USPQ 24. The issue in In re Irani was whether claims directed to a crystalline anhydrous form of a compound, ATMP, was obvious in view of prior art to a glassy form a ATMP. The CCPA stated at 166 USPQ 24, 26

> we are not convinced that the references of record would lead one of ordinary skill in the art to expect that ATMP would exist in a crystalline, anhydrous form or, assuming such an expectation, that the references would render obvious a method by which such ATMP could be produced.

The CCPA further stated at 166 USPQ 24, 27

> As stated above, even assuming that one skilled in the art could have predicted with reasonable certainty that crystalline anhydrous ATMP

> could be produced, we are not convinced by this record that it would also have been obvious how this could be achieved. We note that neither the examiner nor the board has contended that a suitable process would have been obvious.

Thus it is clear from In re Irani that

> even assuming that one skilled in the art could have [theoretically] predicted with reasonable certainty that [a compound] could be produced, we are not convinced by this record that it would also have been obvious how this could be achieved [that is, that there is how to "make and use" predictability of the compound.]

Consequently, it is clear that "theoretical predictability" is not synonymous with "how to make and use" predictability. 35 USC 112, first paragraph requires "how-to-make-and-use predictability," but not "theoretical predictability." (See the Affidavit of News submitted 04/12/2006 which discusses in detail theoretical predictability). Thus even if at the time of Applicants' discovery species of high Tc superconductors could not be "theoretically predicted," this does not mean that Applicants have not taught how to "make and use" their claimed invention. As noted above the Examiner's statement that "The examiner does not deny ... that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K*, such a person of skill in the art, using the techniques described in the application, ... can make the known superconductive compositions" (Emphasis in the original.) acknowledges that Applicants have taught how to "make and use" their claimed invention. Thus the field of high Tc superconductivity is a predictable art subsequent to Applicants' discovery and based on Applicants' teaching.

In In re Wands 858 F.2d 731, 742 (Fed. Cir. 1988); 8 U.S.P.Q.2D 1400 the CAFC stated in a concurring opinion "[The inventor] must provide sufficient data or authority to show that his results are reasonably predictable within the scope of the claimed generic invention, based on experiment and/or scientific theory. " Thus experiment or theory is sufficient to establish predictability. And as stated above by the Examiner "a person of skill in the art, using the techniques described in the application, which included all principles of ceramic fabrication known at the time the application was initially filed, can

make the known superconductive compositions." There is no requirement to know in advance all examples enabled by their teaching. Thus the field of High Tc superconductivity is predictable within the meaning of In re Wands.

The Examiner's reference to "subsequently discovered BSCCO or Tl-systems " suggests that it is the Examiner's view that for Applicants to be allowed a generic claim applicants must know in advance all materials that can be used to practice Applicant's claims. The CAFC has stated in Sri Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 (Fed. Cir. 1985); 227 USPQ 577, 586 that this is not necessary:

> The law does not require the impossible. Hence, it does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention. The law recognizes that patent specifications are written for those skilled in the art, and requires only that the inventor describe the "best mode" known at the time to him of making and using the invention. 35 U.S.C. § 112.

Applicants have shown that persons of ordinary skill in the art as of Applicants discovery can practice applicant's claims to their full scope and the Examiner has, in Applicants view as stated above, agreed with this. The DST Affidavits describe in detail what persons of skill in the art knew prior to Applicants' discovery and how that knowledge together with Applicants' teaching lead others to discover other species within the scope of Applicants' claims.

The CAFC has further stated:

> An applicant for patent is required to disclose the best mode then known to him for practicing his invention. 35 U.S.C. § 112. He is not required to predict all future developments which enable the practice of his invention in substantially the same way. " Hughes Aircraft Co. v. United States, 717 F.2d 1351, 1362 (Fed. Cir. 1983);39 USPQ2d 1065.

This is exactly what applicants have done. Thus Applicant's claims are enabled. The CAFC further states in regards to future developments:

> Enablement does not require the inventor to foresee every means of implementing an invention at pains of losing his patent franchise. Were it otherwise, claimed inventions would not include improved modes of practicing those inventions. Such narrow patent rights would rapidly become worthless as new modes of practicing the invention developed, and the inventor would lose the benefit of the patent

> bargain. Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1071 (Fed. Cir. 2005).

The Examiner's position in regards to the enablement of applicants' claims is inconsistent with the CAFC's position that "Enablement does not require the inventor to foresee every means of implementing an invention." Thus Applicant's claims are enabled and respectfully request that the rejection for lack of enablement be withdrawn.

The Examiner in the Final Action dated 10/20/ 2005 at page 4 refers to a article by Schuller et al. which states in the passage from Schuller et al. quoted by the Examiner "[o]f course, 'enlightened' empirical searches either guided by chemical and materials intuition or systematic searches using well-defined strategies may prove to be fruitful. It is interesting to note that empirical searches in the oxides gave rise to many superconducting systems." See the Affidavit of Newns submitted 04/12/2006 ¶ 18. The DST AFFIDAVITS describe what a person of skill in the art knew prior to Applicants' discovery upon which the systematic empirical study was based in view of Applicant's teaching. The Affidavit of News shows how this systematic empirical study is in principal the same as a systematic theoretical investigation when a well developed theoretical formalism exists. Thus Applicant's claims are predictable within the meaning of 35 U.S.C. 112, first paragraph, and thus enabled. In the response submitted 01/28/2005 at pages 148-150 applicants applied the MPEP ¶ 2164.01(a) Undue Experimentation Factors from In re Wands. Applicants respectfully request the Examiner to review and reconsider this analysis.

The CCPA has stated in In re Marzzocchi 169 USPQ 367,369 (1971):

> the Patent and Trade-mark Office (PTO) bears the initial burden of providing reasons for doubting the objective truth of the statements made by appellants as to the scope of enablement. Only when the PTO meets this burden, does the burden shift to appellants to provide suitable evidence indicating that the specification is enabling in a manner commensurate in scope with the protection sought by the claims.

The only reasons given by the Examiner to "[doubt] the objective truth of the statements made by [Applicants] as to the scope of enablement" is that there is no theory for high Tc

superconductivity and that Applicants describe examples that do not show high Tc properties. As stated above, in Applicants' view, the CCPA and the CAFC, have stated that "theoretical predictability" and knowledge in advance of all species that come within the scope of genus claims is not required under 35 USC 112, first paragraph. All that 35 USC 112, first paragraph requires is "how-to-make-and-use predictability" which, as stated above, Applicants understand, from the Examiner's comments, that the Examiner agrees Applicants teaching provides "how-to-make-and-use predictability."

In a presidential decision of the USPTO Board of Patent Appeals and Interferences, the Board states:

> The examiner notes that only a small group of species of the claimed genus have been prepared. However, the Examiner offers no reason why one skilled in the art could not "make" the claimed compounds. Ex parte Bhide 42 USPQ 1441, 1447.

Consequently, the Board agrees with the statement of the CCPA in In re Marzocchi quoted above. As stated above, it is Applicants' understanding of the Examiner's comments that all know high Tc superconductors can be made following Applicants' teaching. Thus the Examiner "offers no reason why one skilled in the are could not "make the" species that come within the scope of Applicants' genus claims.

In Ex parte Chen, an unpublished decision reported at 61 USPQ 1025, 1028, the Board of Patent Appeals and Interferences held claims to transgenic carp not unpatentable for lack of enablement stating:

> In responding to appellants' arguments, the examiner urges that the level of experimentation is undue and points to the success rate 1% or 20 out of 1746 attempts for the integration of the gene into the embryos described in the specification, (Answer, pages 6 and 14). However, the examiner offers no evidence which would reasonably support a conclusion that one skilled in this art would regard this rate of success for the integration of the rtGH gene as evidencing undue experimentation. We remind the examiner that some experimentation may be required as long as it is not undue. *In re Vaeck 941* F.2d 488,

> 496, 20 USPQ2d 1438, 1445 (Fed. Cir. 1991). Appellants' disclosure explicitly describes the methodology to be used to arrive at the claimed transgenic carp. As the record now stands, the numbers emphasized by the examiner would reasonably appear to reflect the need for a repetitive procedure, rather than un-due experimentation by those wishing to practice the invention.

Notwithstanding that the specification in Ex parte Chen disclosed only a 1% success rate in the examples described in the specification, the Board found the claims enabled since some experimentation may be needed to determine which examples work and which do not. The claims were found enabled since the experimentation was not undue. The need for a repetitive procedure to determine which examples have the desired result does not render the claims not enabled. That is, there was "how-to-make-and-use predictability" in the Ex parte Chen invention even though there appeared to have been no "theoretical predictability" and even though the Ex parte Chen applicant could not predict in advance or specifically teach in advance of experimentation which species had the desired result. Thus, that Applicants' specification describes examples that either do not show a Tc greater than or equal to 7.26 K or examples that have phases with and without a Tc greater than or equal to 26 K does not mean that they have not enabled their genus claims. Consequently, when the Examiner states as quoted above that "[t]he examiner does not deny ... that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K*, such a person of skill in the art, using the techniques described in the application, ... can make the known superconductive compositions" (Emphasis in the original.), the Examiner is acknowledging that persons of skill in the art knew how to make species that come within the scope of Applicants' genus claims. That the species within this genus which have the desired high Tc property may be determined experimentally and not by a theoretical means according to the Board's decision in Ex parte Chen, does not mean that Applicants genus claims are not enabled. The CCPA agrees with this when it states:

> What the dissent seem to be obsessed with is the thought of catalysts which won't work to produce the intended result. Applicants have enabled those in the art to see that this is a real possibility, which is commendable frankness in a disclosure. Without undue experimentation or effort or

> expense the combinations which do not work will readily be discovered and, of course, nobody will use them and the claims do not cover them. The dissent wants appellants to make everything predictable in advance, which is impracticable and unreasonable. In re Angstadt. 190 USPQ 214, 219.

From this it is clear that 35 U.S.C. 112, first paragraph, does not require everything to be predictable in advance and permits the determination of the combinations that will and will not work by experimentation that is not undue.

The USPTO Board of Patent Appeals and Interferences in Ex parte Jackson 217 USPQ 804 (Bd. App. 1982) states at 217 USPQ 804, 806-807:

> The first paragraph of 35 U.S.C. 112 requires that the disclosure of an invention be "in such a full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains or with which it is most nearly connected, to make and use the same ... Decisional law has interpreted the statutory requirement as dictating that sufficient information be given in the application so that one of ordinary skill in the art can practice the invention without undue experimentation. ...
>
> The determination of what constitutes undue experimentation in a give case requires the application of a standard or reasonableness, having due regard for the nature of the invention and the state of the art. ...
>
> The test is not merely quantitative, since a considerable amount of experimentation is permissible if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the invention claimed.

The Board states at 217 USPQ 806 "The issue squarely raised by [the] rejection [of claims] is whether or not a description of several newly discovered strains of bacteria having a particularly desirable metabolic property in terms of the conventionally measured culture characteristic and a number of metabolic and physiological properties would enable one of ordinary skill in the relevant art to independently discover additional strains having the same specific desirable metabolic property, i.e., the production of a particular antibiotic." Thus the Board in Ex parte Jackson would find a disclosure enabling that permits "one of ordinary skill in the relevant art to independently discover additional"

high Tc materials that come within the scope of Applicants' generic claims, in particular in view of the Examiners' finding that "The examiner does not deny ... that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K*, such a person of skill in the art, using the techniques described in the application, ... can make the known superconductive compositions." (Emphasis in the original.)

The Board in Ex parte Jackson further states at 217 USPQ 808 "The problem of enablement of processes carried out by microorganisms were uniquely different from the field of chemistry generally. Thus, we are convinced that such recent cases as In re Angstadt 537 F.2d 498, 190 USPQ 214 (CCPA 1976) and In re Geerdes 491 F.2d 1260, 180 USPQ 789 (CCPA 1974) are in apposite to this case." Therefore, since the present application is not directed to biotechnology or microorganism invention, the decision of Ex parte Jackson does not apply, but In re Angstadt and In re Geerdes do apply.

Applicants note that the Board's decision in Ex parte Jackson that in determining whether there is enablement "a considerable amount of experimentation is permissible if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the invention claimed." As stated above the Examiner agrees that the known high Tc superconductors can be made as described by Applicants. Thus Applicants have "provided guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the invention claimed."

The Board in Ex parte Jackson further states at 217 USPQ 808 "The experimentation involved in the ordinary chemical case, including [In re Angstadt and In re Geerdes], usually arise in testing to establish whether a particular species within the generic claim language will be operable in the claimed process." As stated herein the method of "testing" to establish whether a particular species within the generic claim language will be superconductive with a $T_c \geq 26°K$ is well known prior to Applicants'

discovery. Also, the process for making the compositions is well known prior to the Applicants' discovery.

Applicants have extensively discussed In re Angstadt 190 USPQ 214 in their response dated 01/28/2005 in response to office action dated 07/28/2004 titled "Amendment." According to In re Angstadt 190 USPQ 214, 218 in an unpredictable art, §112 does not require disclosure of a test with every species covered by a claim. As stated herein it is Applicants' position that the present application is not directed to an unpredictable art. The CCPA states:

> To require such a complete disclosure would apparently necessitate a patent application or applications with "thousands" of examples ... More importantly, such a requirement would force an inventor seeking adequate patent protection to carry out a prohibitive number of actual experiments. This would tend to discourage inventors from filing patent applications in an unpredictable area since the patent claims would have to be limited to those embodiments which are expressly disclosed. A potential infringer could readily avoid "literal" infringement of such claims by merely finding another analogous catalyst complex which could be used in "forming hydroperoxides." (Emphasis Added)

Under In re. Angstadt, a patent application is not limited to claims covering embodiments expressly disclosed in their specification even in an unpredictable art. The CCPA In re Angstadt further states "[applicants] are *not* required to disclose every *species* encompassed by the claims even in an unpredictable art" 190 USPQ 214, 218. (Emphasis in the original). The CCPA further states that:

> "what is a maximum concern In the analysis of whether a particular claim is supported by the disclosure in an application, is whether the disclosure contains sufficient teaching regarding the subject matter of the claims as to enabled one of skill in the art to make and to use the claimed invention. These two requirements 'how to make' and 'how to use' have some times been referred to in combination as the 'enablement requirement'... The relevancy may be summed up as being whether the scope of enablement provided to one of ordinary skill in the art by the disclosure as such as to be commensurate with the scope or protection sought by the claims. (190 USPQ 214,47 citing In re Moore 169 USPQ).

The enablement requirement is "how to make" and "how to use" the claimed invention and does not include knowledge in advance of all species that come within the scope of the claim. "[C]ommensurate with the scope of protection sought by the claims" is "how to

make" and "how to use" the claimed invention which, as stated above, in Applicants' view the Examiner has acknowledged Applicants have satisfied by the Examiner stating that "The examiner does not deny ... that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to *26K*, such a person of skill in the art, using the techniques described in the application, ... can make the known superconductive compositions." (Emphasis in the original.)

The Board in Ex parte Jackson cited In re Geerdes 180 USPQ 789. The Court in In re Geerdes at 180 USPQ 793 states in reversing a rejection of claims under 35 U.S.C. 112, first paragraph, for lack of enablement "the area of technology involved here in not particularly complex and there is no evidence in the record to indicate that one of skill in the art would not be able to make and use the claimed invention." The area of technology involved in the present application in regard to making high T_c materials was well known prior to Applicants' discovery and the Examiner agrees that known high Tc materials can be made according to Applicants' teaching.

The Court in In re Geerdes further states at 180 USPQ 993 "The Board expressed concern that 'experimentation' is involved in the selection of proportions and particle sizes, but this is not determinative of the question of scope of enablement. It is only undue experimentation that is fatal." There is no evidence that undue experimentation is needed "to make" materials to practice Applicants' claims.

The Court in In re Geerdes further states at 180 USPQ 793 "we cannot agree with the Board's determination that the claims are inclusive of materials which would not apparently be operative in the claimed process ... of course it is possible to argue that process claims encompass inoperative embodiments on the premise of unrealistic or vague assumptions, but that is not a valid basis for rejection." In the present application the Examiner's basis for rejection of Applicants' claims is impermissibly premised on unrealistic or vague assumptions, such as examples cited by Applicant having a $T_c < 26^{\circ}K$ and statements such as the theory of high Tc Superconductivity is not understood. As noted above whether or not there is a theory of high Tc superconductivity is not

RECEIVED
CENTRAL FAX CENTER
SEP 18 2006

determinative of whether the art of high Tc superconductivity is "unpredictable." An art is unpredictable if "how to make and use" is not well understood. If the existence of a theory enhances an understanding of "how to make and use," the theory increases the level of "predictability" of the art. If persons of ordinary skill in the art know "how to make and use" the claims of the invention, the absence of a theory does not result in the art being unpredictable.

That there may be later discovered species not specifically identified or suggested by Applicants' teaching may result in patents issued to the discovers of the later discovered species, but this does not mean that Applicants have not taught "how to make and use" such later discovered species even if there is no "theoretical predictability" so long as Applicants have taught how "to make and use," which Applicants assert they have done and for which it is Applicants' understanding of the Examiner's comments that this is also the Examiner's understanding. As stated above the Board, CCPA and the CAFC have held that experimental determination using known procedures even where such known procedures produce species that do not have the desired result satisfies the enablement requirement. For the reasons given herein, it is Applicants' position that under In re Fisher and the other decisions referred to herein Applicants' claims are enabled and Applicants respectfully request the Examiner to withdraw the rejection of Applicants' claims under 35 USC 112, first paragraph, for lack of enablement.

Please charge any fee necessary to enter this paper and any previous paper to deposit account 09-0468.

Respectfully submitted,

Date: September 18, 2006

By: _____
Dr. Daniel P. Morris, Esq.
Reg. No. 32,053
Phone No. (914) 945-3217

IBM Corporation
Intellectual Property Law Dept.
P. O. Box 218
Yorktown Heights, New York 10598